

WHAT IS CLAIMED IS:

1. A method of generating a transmission signal, comprising the steps of:
 - 5 determining non-compensation signal points in a two-dimensional plane without considering a signal error caused by digital quadrature modulation, the two-dimensional plane being defined by a real axis and an imaginary axis, the real axis corresponding to real-part signal components, the imaginary axis
10 corresponding to imaginary-part signal components;
determining compensation signal points in the two-dimensional plane in response to a signal error caused by digital quadrature modulation if the non-compensation signal points are used, the non-compensation signal points and the compensation
15 signal points being point-symmetry;
sequentially assigning digital information signal pieces to one of the compensation signal points in response to contents of the digital information signal pieces; and
subjecting the digital information pieces to a modulation
20 process including digital quadrature modulation in response to the assignment given by the assigning step to generate a radio-frequency transmission signal.
2. A method as recited in claim 1, wherein the compensation
25 signal points provide compensation for an error in the radio-frequency transmission signal which is caused by one of a phase

difference between an in-phase signal and a quadrature signal, an amplitude difference between the in-phase signal and the quadrature signal, and an error in a quadrature relation between the in-phase signal and the quadrature signal.

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3. A method as recited in claim 1, wherein the compensation signal points provide compensation for an error in the radio-frequency transmission signal which is caused by a timing difference between an in-phase signal and a quadrature signal.

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4. A method of generating a transmission signal, comprising the steps of:

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determining first non-compensation signal points in a two-dimensional plane without considering a signal error caused by digital quadrature modulation, the two-dimensional plane being defined by a real axis and an imaginary axis, the real axis corresponding to real-part signal components, the imaginary axis corresponding to imaginary-part signal components;

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determining second non-compensation signal points in the two-dimensional plane without considering the signal error caused by digital quadrature modulation;

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determining first compensation signal points in the two-dimensional plane for a first subcarrier in response to a signal error caused by digital quadrature modulation if the first non-compensation signal points are used, the first non-compensation signal points and the first compensation signal points being point-

symmetry;

determining second compensation signal points in the two-dimensional plane for a second subcarrier in response to a signal error caused by digital quadrature modulation if the second non-compensation signal points are used, the second non-compensation signal points and the second compensation signal points being point-symmetry, the second subcarrier being equal in frequency to the first subcarrier and being different in polarity from the first subcarrier;

10 sequentially assigning first digital information signal pieces to one of the first compensation signal points in response to contents of the first digital information signal pieces;

sequentially assigning second digital information signal pieces to one of the second compensation signal points in response to contents of the second digital information signal pieces; and

15 subjecting the first digital information pieces and the second digital information pieces to a modulation process including digital quadrature modulation in response to the assignments given by the assigning steps to generate a radio-frequency transmission signal containing the first and second subcarriers.

5. An apparatus for generating a transmission signal, comprising:
means for determining non-compensation signal points in a two-dimensional plane without considering a signal error caused by digital quadrature modulation, the two-dimensional plane being defined by a real axis and an imaginary axis, the real axis

corresponding to real-part signal components, the imaginary axis corresponding to imaginary-part signal components;

means for determining compensation signal points in the two-dimensional plane in response to a signal error caused by digital quadrature modulation if the non-compensation signal points are used, the non-compensation signal points and the compensation signal points being point-symmetry;

means for sequentially assigning digital information signal pieces to one of the compensation signal points in response to contents of the digital information signal pieces; and

means for subjecting the digital information pieces to a modulation process including digital quadrature modulation in response to the assignment given by the assigning means to generate a radio-frequency transmission signal.

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6. An apparatus for generating a transmission signal, comprising:
first means for storing information representing assignment of states of a signal piece to signal points predetermined in response to an estimated signal error caused by digital quadrature modulation in the absence of correction;

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second means for assigning an input information signal piece to one of the signal points in response to a state of the input information signal piece according to the information stored in the first means to convert the input information signal piece into first and second baseband signal pieces; and

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third means for subjecting the first and second baseband

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signal pieces generated by the second means to a modulation
process including digital quadrature modulation to convert the first
and second baseband signal pieces into a piece of a modulation-
resultant transmission signal from which a signal error caused by
5 the digital quadrature modulation is removed.

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